

### **ABSTRACT**

A system and method of co-allocating resources within a compute environment are disclosed. The method embodiment of the invention comprises receiving a request for a reservation for a first type of resource, analyzing constraints and guarantees associated with the first type of resource, identifying a first group of resources that meet the request for the first type of resource and storing in a first list, receiving a request for a reservation for a second type of resource, analyzing constraints and guarantees associated with the second type of resource, identifying a second group of resources that meet the request for the second type of resource and storing in a second list, calculating a co-allocation parameter between the first group of resources and the second group of resources and reserving resources according to the calculated co-allocation parameter of the first group of resources and the second group of resources. The request may also request exclusivity of the reservation.